266 A Belgian survey of long-term TOBI® treatment in cystic fibrosis patients

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Tobramycin solution for inhalation (TOBI) is available in Belgium since August 2003 for the treatment of chronic pulmonary infection with *Pseudomonas aeruginosa* in CF patients aged 6 years and older.
The objectives of this observational study were to survey lung function (expressed as percentage of FEV_1 predicted), exacerbations of respiratory infections, hospitalizations, and BMI in CF patients on long-term TOBI treatment.
Of the 90 patients included in the analysis, 60% were male and 40% female. The median age was 23 years (range: 9–46 years), with 80% of the patients being at least 18 years old. In the adult population, mean BMI stayed around 20 kg/m^2 during the survey. In the entire population the mean FEV_1 decreased from 62 to 57% during an 18 months treatment period. In the adult population, a decrease was also observed, from 60 to 58%. The yearly rate of exacerbation was 1.45 for the entire population and 1.50 for the adult population. In the entire population the mean number of hospitalizations per year was 0.82 and the mean number of days per year on IV antibiotics was 8.16. TOBI was stopped in 9 patients (10%), most frequently because of lung transplantation (3.3%) and airway irritability symptoms (3.3%).
Conclusion: In a 2-year Belgian survey of CF patients, treatment with TOBI was well tolerated and appeared to stabilize the lung function decline in the adult population. Intolerance in a limited number of patients was the most frequent event leading to treatment stop.

267 e-Flow rapid®: improved lung function and patient satisfaction with more volume delivered to the lungs during inhalation therapy in cystic fibrosis

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Objective: To define the benefit of the new inhalation device Pari eFlow rapid® in comparison to conventional inhalation devices for basic inhalation therapy with sodium chloride solutions.
Patients: 53 CF patients participated and 43 completed the study (21 males, mean age 17.2±9.7 years, range 5–47, mean FEV-1% predicted 80.2±25).
Methods: Prospective, randomized, cross over analysis comparingtwo week periods of inhalation with (i) conventional device, (ii) Pari eFlow rapid® using the same volume of inhalation solution, but shorter duration of inhalation, (iii) Pari eFlow rapid® using the same duration of inhalation therapy, but increased volume of salt solution. Primary outcome was improvement of FEV-1% predicted of daily lung function testing with an ambulatory spirometry (Micro DL, Viasys, Germany) compared to one week run-in baseline.
Results: Compared to baseline, mean FEV-1% was the same when the conventional inhalation device was used (80.6±25). FEV-1% was higher if Pari eFlow rapid® was used with the same volume (82.9±25, $p = 0.032$) and was best if Pari eFlow rapid® was used with the same duration of inhalation therapy as with standard device therapy (83.3±26, $p = 0.001$). In the later case inhalation solution volume was increased by a mean of 269%. Mean patient satisfaction considering subjective efficacy was better with the Pari eFlow rapid® [scale from 1: best to 6: worst: (i) 2.31, (ii) 1.87, (iii) 1.94].
Conclusion: Efficacy of basic inhalation therapy can be improved using inhalation devices which generate a larger aerosol output per time. Best effects can be obtained if inhalation time is not diminished but the amount of inhalation solution is increased instead.
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268* Quality of life in people with cystic fibrosis whilst clinical stable

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Improvements in survival and reduction in lung function decline for patients with CF has led to consideration of novel trial endpoints, including quality of life (QoL).
Methods: 209 CF patients from 5 CF centres were recruited. The CFQ was applied to children (children & parent administered) and adolescents/adults (self-administered).
Aim: Determine QoL in people with CF recruited to a multicentre trial, using a CF QoL tool (CFQ) (Quittner 2003).
We determined: 1) the relationship between child and parent administered CFQ tools during stability and 2) if QoL was related to markers of CF severity.
Results: 1) Seven domains were applied to children (child & parent administered). In two domains parental response was lower than child response (treatment & eating), two domains were higher (respiratory & digestion), and three were similar. Scores for each of the domains for children were similar to the published literature. 2) FEV1% pred in children was related to respiratory & eating domains ($r = 0.38$–0.43, $p < 0.001$), and in adolescents/adults related to physical, role, vitality, health & respiratory domains ($r = 0.27$–0.58, $p < 0.001$). CRP in children was negatively related to the respiratory domain ($r = -0.43$, $p = 0.002$), & in adolescent/adult patients to physical, vitality, eating, health, weight & respiratory domains ($r = -0.16$ to -0.36, $p < 0.05$).
Conclusions: Parents & their children do not have the same perception for all QoL domains. Domains of CFQ in older people with CF are correlated with markers of disease severity & to a lesser extent in children.
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269 Effect on quality of life and treatment adherence of nebulization's duration in cystic fibrosis (CF)

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The aim of this study was to assess the impact of inhalation therapy duration on treatment adherence and quality of life among CF patients. The eFlow™ was selected thing that it is customized to be more rapid and efficient in pulmonary drug delivered compared to current nebulizer systems.
Methods: Seventeen patients with CF were enrolled to evaluate the new electronic inhaler during one month. Patient perception and adherence to the eFlow™ were assessed using CFQ14 questionnaire at the beginning and end of the trial. Recordings of FCV and FEV1 were collected at the beginning and after one month of treatment.
Results: 17 patients completed survey (9 female and 8 male), mean age 17.5 range 7.6–29.2 years. The end of trial questionnaire showed an increased patient's adherence to eFlow™ system (–0.97 forgetting by month). Indeed, among 17 patients, 8 increased significantly adherence ($p < 0.05$). Time spent for nebulization decreased: mean 15 minutes ±5 minutes and not offset by preparation time. Quality of life linked to treatment constraints increased 72.3 vs 62 ($p < 0.005$). The difference is sufficient to be felt by patient.
Conclusion: treatments constraints improvement increased adherence and quality of life. Other factors contribute towards adherence: the effect felt, understanding of the disease and the principle of action of medication. It's essential to better understand the factors of compliance to treatment in chronic diseases in order to improve the care of patients. The simplification of delivery procedures is important as therapeutic education of patients to improve treatment adherence.